

1. A control system for controlling a brake system of a vehicle during a turn, said vehicle having four wheels, said brake system being configured to selectively control brake pressure to each of said wheels, said control system comprising a controller for monitoring a slip status of each of said four wheels during a turn and wherein said controller is configured to direct said
5 brake system to independently increase, decrease, or hold the brake pressure applied to each of said four wheels based at least in part upon slip status of each respective wheel.

2. The system of claim 1 wherein said slip status of each wheel is related to the difference between a speed of each wheel and an adjusted speed of said vehicle.

3. The system of claim 2 wherein said slip status of each wheel is represented by the associated difference divided by the adjusted speed of said vehicle.

4. The system of claim 2 wherein said adjusted speed of said vehicle incorporates the speed of said vehicle at a center of gravity of said vehicle.

5. The system of claim 2 wherein said adjusted speed of said vehicle incorporates the speed of said vehicle at a center of gravity of said vehicle and a yaw velocity component of said vehicle.

6. The system of claim 5 wherein said controller is configured to determine a corrective differential velocity which represents a velocity difference between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle, and wherein said adjusted speed of said vehicle incorporates said corrective differential velocity.

7. The system of claim 1 wherein said controller is configured to determine a corrective differential velocity which represents a velocity difference between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle, and wherein said controller is configured to

independently direct said brake system to increase, decrease, or hold the brake pressure applied to each of said four wheels based at least in part upon said corrective differential velocity.

8. The system of claim 1 wherein said controller is configured to direct said brake system to decrease brake pressure to a wheel when the slip status for that wheel exceeds a first slip value.

9. The system of claim 8 wherein said controller is configured to determine a corrective differential velocity which represents a velocity difference between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle, and wherein said controller is configured to direct said brake system to decrease brake pressure to a wheel when the slip for that wheel exceed a second slip value and when such a decrease would improve the stability of the vehicle based upon an examination of said corrective differential velocity.

10. The system of claim 9 wherein said controller is configured to determine whether a decrease would improve the stability of the vehicle based upon an examination of said corrective differential velocity by comparing the magnitude of the corrective differential velocity to a differential velocity threshold.

11. The system of claim 10 wherein said comparison includes consideration of the direction of the turn.

12. The system of claim 9 wherein said first slip value is greater than said second slip value.

13. The system of claim 1 wherein said controller is configured to direct said brake system to increase brake pressure to a wheel when the slip status for that wheel is less than a third slip value.

14. The system of claim 13 wherein said controller is configured to direct said brake system to increase brake pressure to a wheel only when the pressure in the brake of interest is less than the pressure in a master cylinder of the brake system.

15. The system of claim 13 wherein said controller is configured to determine a corrective differential velocity which represents a velocity differential between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle, and wherein said controller is configured to direct said brake system to increase brake pressure to a wheel when the slip for that wheel exceed a fourth slip value and when such an increase would improve the stability of the vehicle based upon an examination of said corrective differential velocity.

16. The system of claim 15 wherein said controller is configured to determine that a increase would improve the stability of the vehicle based upon an examination of said corrective differential velocity by comparing the magnitude of the corrective differential velocity to a differential velocity threshold.

17. The system of claim 16 wherein said comparison includes consideration of the direction of the turn.

18. The system of claim 15 wherein said third slip value is less than said fourth slip value.

19. The system of claim 1 wherein said system further includes a vehicle having a plurality of wheels and a plurality of brake subsystems, each brake subsystem being associated with one of said wheels to apply a brake pressure to the associated wheel, and wherein said controller is operatively coupled to each brake subsystem.

20. The system of claim 1 wherein said controller is arranged in a closed-loop configuration such that said controller generally continuously repeats said monitoring and said increasing, decreasing or holding.

21. A control system for controlling a brake system of a vehicle during a turn, said vehicle having a plurality of wheels, said brake system being configured to selectively control brake pressure to each of said wheels, said control system comprising a controller for determining a corrective differential velocity which represents a velocity differential between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle, and wherein said controller is configured to direct said brake system to increase, decrease, or hold the brake pressure applied to each of said wheels based at least in part upon said corrective differential velocity.

22. The system of claim 21 wherein said vehicle has four wheels and wherein said controller is configured to direct said brake system to independently increase, decrease, or hold the brake pressure applied to each of said four wheels.

23. The system of claim 22 wherein said controller is configured to direct said brake system to independently increase, decrease, or hold the brake pressure applied to each of said four wheels based at least in part upon slip status of each respective wheel.

24. The system of claim 23 wherein said slip status of each wheel is related to the difference between a speed of each wheel and an adjusted speed of said vehicle.

25. The system of claim 24 wherein said adjusted speed of said vehicle incorporates the speed of said vehicle at a center of gravity of said vehicle.

26. The system of claim 21 wherein said controller is configured to direct said brake system to decrease brake pressure to a wheel when the slip status for that wheel exceeds a first slip value.

27. The system of claim 21 wherein said controller is configured to direct said brake system to increase brake pressure to a wheel when the slip status for that wheel is less than a second slip value.

28. The system of claim 21 wherein said system further includes a vehicle having a plurality of wheels and a plurality of brake subsystems, each brake subsystem being associated with one of said wheels to apply a brake pressure to the associated wheel, and wherein said controller is operatively coupled to each brake subsystem.

29. The system of claim 21 wherein said controller is arranged in a closed-loop configuration such that said controller generally continuously repeats said monitoring and said increasing, decreasing or holding.

30. A method for controlling the brake system of a vehicle during a turn, said vehicle having four wheels, the method comprising:

- applying brake pressure to each of said wheels;
- monitoring a slip status of each of said four wheels during a turn; and
- independently increasing, decreasing, or holding the brake pressure applied to each of said four wheels based at least in part upon slip status of each respective wheel.

31. A method for controlling the brake system of a vehicle during a turn, said vehicle having a plurality of wheels, the method comprising:

- applying brake pressure to each of said wheels;
- determining a corrective differential velocity which represents a velocity differential
- 5 between at least one wheel on one side of said vehicle and at least another wheel on another side of said vehicle that is desired to maintain the desired heading of said vehicle; and
- increasing, decreasing, or holding the brake pressure applied to each of said wheels based at least in part upon said determined corrective differential velocity.